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REVISED CATALOG OF LUNAR CRATERS I

by

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[1963] *ref*

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Introduction

This catalog gives the selenographic coordinates of all craters observable on a selected portion of the moon's surface. The diameter of the crater together with comments on shape are also given. Approximately 15 per cent of the craters have been measured previously by other observers. The catalog gives the position found in the present series of measurements and the name adopted by the International Astronomical Union.

Boundaries of Section

The section studied here was a strip on sheet C 5-a of the 'Photographic Lunar Atlas', (Kuiper, 1960). The east and west borders of the area followed the lines defined by the equations:

$$\eta = -7.57 \xi + 0.05 \quad (1)$$

$$\eta = -7.57 \xi + 1.45 \quad (2)$$

The north and south boundaries were taken as the edges of the photograph.

OTS PRICE

XEROX

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2.60 ph

MICROFILM

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0.95 mf.

Selection criteria

(1.) A crater must have at least half of its wall clearly visible.

(2.) When foreshortening has been allowed for, a crater must be approximately circular. If elliptical, its eccentricity must not be greater than 0.75, i.e. the ratio of major to minor axes must not exceed 1.5. A crater may be polygonal, but its longest diameter must not exceed 1.5 times its shortest diameter.

(3.) A distinct shadow must be visible on some photograph of the crater, and the shadow must be properly oriented with respect to the sun.

The only types of craters which are likely to be missing in significant numbers are (a) those which are very small (less than 3 km in diameter) and (b) those which are very shallow and far from the terminator.

The photograph of the area to be surveyed was oriented with south at the top. For convenience, an x and y axes were chosen parallel to the edges of the photograph, the origin was set at the lower left corner, and the x-y coordinate grid established in inches. The method used to calculate the plate constants is that described by Belsky (1962). Crater coordinates were used as inputs to the Belsky program, with values of ξ , η obtained from D. W. G. Arthur (1962.) This procedure avoids the errors contained in the coordinate grid of the Arthur and Whitaker (1960) atlas. (See Friesen

(1963)).

In the catalog the first two lines (01, 02) on the first page, under "Calculation of Plate Constants", give the constants A_1 to F_1 in the equation

$$\xi = A_1 x^2 + B_1 xy + C_1 y^2 + D_1 x + E_1 y + F_1 \quad (3)$$

The second two lines (03, 04) give the constants in the equation

$$\eta = A_2 x^2 + B_2 xy + C_2 y^2 + D_2 x + E_2 y + F_2 \quad (4)$$

The constants are given in Fortran floating point format. For example, $A = -.11039169E - 04$ should be interpreted as $A = -0.11039169 \times 10^{-4}$.

Line 05 on the first page gives the scale factor F , which was calculated in the following manner. Several pairs of craters, whose coordinates (ξ, η, x, y) are known, were chosen such that for each pair the line joining the craters is very nearly parallel to the limb of the moon. The distance between the craters on the photograph, in inches, was measured either directly or by using the equation:

$$d = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2} \quad (5)$$

The same distance was measured in units of the Moon's

radius as follows:

$$D = \sqrt{(\xi_1 - \xi_2)^2 + (\eta_1 - \eta_2)^2 + (\zeta_1 - \zeta_2)^2} \quad (6)$$

where $\zeta = \sqrt{1 - \xi^2 - \eta^2}$. For two craters on a line nearly parallel to the limb $(\zeta_1 - \zeta_2)^2$ is negligible. Then the scale factor F is given, in kilometers per inch on the photograph, by:

$$F = \frac{R D}{d} \quad (7)$$

where R is the lunar radius in km. Values for F are computed for as many pairs of craters as can conveniently be chosen; the average value thus obtained, with its estimated error, is quoted in line 05.

Residuals and errors

The residuals from the determination of plate constants gave an rms. value less than ± 0.0003 for ξ and η , corresponding to an uncertainty in position on the surface of ± 0.5 km. Although undetected systematic errors almost certainly exist, the positions given are probably reliable to ± 1.0 km. The error in determining the diameter of the craters depends to a great extent on the individual crater. The error is estimated as ± 30 per cent for small craters, decreasing to ± 10 per cent for the largest crater.

The catalog gives the position of the geometrical center of the rim. If the rim is raised above the mean level of the moon then the measured center is displaced towards the limb of the moon. This displacement is in general less than 1 km and is negligible compared to the uncertainty of defining the rim for a large crater.

The remainder of the pages under the heading "Calculation of Plate Constants" give the coordinates of the craters used for the calculation (Belsky 1962).

Explanation of Columns in the Catalog

The first column (CRATER) gives the designation of craters. Named craters follow the IAU system (Blagg and Müller 1932).

Columns 2 and 3 (XSI and ETA) give the computed orthographic coordinates of each crater. These values are reliable to three places of decimal.

Columns 4 and 5 (X and Y) give the coordinates of each crater, in inches, as measured on the photograph.

Column 6 (DIAM) gives the diameter of each crater in kilometers. The diameter of each crater was measured in inches on the photograph, and the scale factor described above was used to convert to kilometers. Diameters are peak-to-peak and parallel to the limb, except for elliptical craters for which the foreshortening was removed and the longest diameter taken. The smallest craters included in the

catalog are approximately one kilometer in diameter, corresponding to 0.03 inches on the photographs.

Column 7 (Q) provides an index to how well each crater fulfills our criteria for crater selection. A crater of quality "C" barely meets the minimum requirements for inclusion in the catalog. It may have just half of its wall visible, or be very elliptical, or show a shadow on only one photograph, or be so small as to be barely visible. Craters of quality "B" may have a small part of the wall missing or be somewhat elliptical or polygonal. Craters of quality "A" show distinct, properly oriented shadows on at least two photographs taken under opposing illuminations, have complete or nearly complete walls, and are not strongly elliptical or polygonal.

Column 8 (P) denotes how perfect a polygon each crater is. Craters for which there is no entry in this column are circular or nearly so. "A" craters are well-defined, quite regular, complete polygons. A "B" crater is less regular and the "A" polygons, may have sides of drastically unequal length, or may have one or more sides missing. A "C" crater is not a well-defined polygon; it may be a circular crater with irregular walls, or if it is a true polygon the number of its sides cannot be ascertained. In this column, the letter (A, B, or C) is followed by a digit giving the number of sides in the polygon. For example, "A6" denotes a well-defined, hexagonal crater. A "B4" crater may be a square

with one side missing, or a trapezoidal formation, etc.

Column 9 (RMKS) contains a series of numbered asterisks referring the reader to additional remarks or information given on a separate page at the end of the catalog.

Column 10 (REG) gives the number of the photograph on which each crater was measured.

Notice of Revision

This catalog replaces Catalog I (Report No. 4). The change is occasioned by a correction in plate constants made necessary by errors in the Arthur and Whittaker (1960) atlas. The nature of the errors is discussed by Friesen (1963).

References

- Belsky, L., 1962. The Transformation between Cartesian and Conic Coordinates. Lunar Project, Report 1, August 1962, Boston University, NASA G246-62.
- Blagg, Mary A., and Müller, K., 1932. Named Lunar Craters, Commission 17, International Astronomical Union, Percy Lund and Humphries, London.
- Kuiper, G. P., 1960. Photographic Lunar Atlas, Univ. Chicago Press.
- Arthur, D. W. G., and E. A. Whitaker, 1960. Orthographic Atlas of the Moon (ed. by G. P. Kuiper), University of Arizona Press.
- Friesen, D. D., 1963. The Choice of Fiducial Points in Determining Plate Constants for Lunar Photographs. Lunar Project, Report 9, November 1963, Boston University, NASA G246-62.
- Arthur, D. W. G. (1962). Consolidated Catalog of Selenographic Positions. Comm. of the Lunar and Planetary Laboratory V.1, No. 11, University of Arizona.

BOSTON UNIVERSITY CATALOG OF LUNAR CRATERS

AREA C5

CALCULATION OF PLATE CONSTANTS -

A=-.12194113E-05	B= .15424568E-05	C= .23432740E-05	01
D=-.20247768E-01	E=-.22034148E-02	F= .32868713E 00	02
A= .13565182E-04	B= .43432244E-06	C= .17351265E-04	03
D= .17230374E-02	E=-.20035161E-01	F=-.43754656E-02	04
F = 35.12 +- .20	KM/IN		05

X	Y	XSI	XSI(C)	DELTA	ETA	ETA(C)	DELTA
16.2900	01.7900	-00.0057	-00.0053	-00.0003	-00.0083	-00.0085	00.0002
13.6700	01.3000	00.0486	00.0488	-00.0002	-00.0040	-00.0042	00.0002
10.9800	00.9100	00.1040	00.1042	-00.0002	-00.0018	-00.0020	00.0002
08.0000	01.4800	00.1637	00.1633	00.0003	-00.0190	-00.0193	00.0003
09.9200	02.0800	00.1231	00.1231	-00.0000	-00.0274	-00.0275	00.0001
13.2800	02.6700	00.0535	00.0537	-00.0002	-00.0324	-00.0324	00.0000
09.6000	02.4900	00.1290	00.1287	00.0002	-00.0365	-00.0363	-00.0001
06.9000	02.8100	00.1827	00.1827	-00.0000	-00.0480	-00.0479	-00.0000
15.5700	04.3400	00.0041	00.0037	00.0003	-00.0608	-00.0608	00.0000
07.4000	03.8800	00.1705	00.1703	00.0001	-00.0682	-00.0683	00.0001
14.9500	04.9300	00.0148	00.0150	-00.0002	-00.0740	-00.0739	-00.0000
13.8700	04.9900	00.0369	00.0367	00.0001	-00.0778	-00.0773	-00.0004
13.7700	04.7800	00.0395	00.0392	00.0002	-00.0737	-00.0734	-00.0002
09.2200	04.1800	00.1326	00.1327	-00.0001	-00.0707	-00.0707	00.0000
13.3400	05.2000	00.0476	00.0470	00.0005	-00.0825	-00.0826	00.0001
11.3900	05.0700	00.0870	00.0868	00.0001	-00.0843	-00.0840	-00.0002
09.0300	05.0400	00.1346	00.1347	-00.0001	-00.0885	-00.0882	-00.0002
13.6200	05.8600	00.0401	00.0399	00.0001	-00.0954	-00.0951	-00.0002
05.7800	05.3800	00.1999	00.1998	00.0000	-00.1013	-00.1012	-00.0000
12.4300	06.8700	00.0620	00.0619	00.0000	-00.1177	-00.1176	-00.0000
07.8400	06.4800	00.1558	00.1557	00.0000	-00.1193	-00.1191	-00.0001
05.9300	06.1200	00.1953	00.1952	00.0000	-00.1159	-00.1156	-00.0002
13.9400	07.2200	00.0304	00.0305	-00.0001	-00.1216	-00.1214	-00.0001
12.3900	07.1800	00.0619	00.0620	-00.0001	-00.1241	-00.1238	-00.0002
06.9900	06.8100	00.1720	00.1722	-00.0002	-00.1276	-00.1272	-00.0003
14.3700	07.8600	00.0206	00.0204	00.0001	-00.1336	-00.1331	-00.0004
13.2700	07.9400	00.0423	00.0425	-00.0002	-00.1374	-00.1370	-00.0003
05.7900	06.8800	00.1967	00.1964	00.0002	-00.1311	-00.1309	-00.0001
13.5200	08.2100	00.0374	00.0369	00.0004	-00.1417	-00.1418	00.0001
12.8500	08.4300	00.0503	00.0500	00.0002	-00.1478	-00.1476	-00.0001
11.5000	08.2800	00.0776	00.0777	-00.0001	-00.1472	-00.1474	00.0002
07.6800	07.9500	00.1563	00.1558	00.0004	-00.1487	-00.1484	-00.0002
06.0100	07.6000	00.1906	00.1904	00.0001	-00.1449	-00.1447	-00.0001
11.7400	08.6900	00.0722	00.0719	00.0002	-00.1551	-00.1550	-00.0000
09.0000	08.2200	00.1287	00.1285	00.0001	-00.1513	-00.1512	-00.0000
05.9000	08.1800	00.1912	00.1913	-00.0001	-00.1567	-00.1564	-00.0002
14.6000	09.3800	00.0125	00.0125	-00.0000	-00.1624	-00.1626	00.0002

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X	Y	XSI	XSI(C)	DELTA	ETA	ETA(C)	DELTA
12.0000	09.9300	00.0641	00.0640	00.0000	-00.1789	-00.1789	00.0000
11.3500	09.4900	00.0783	00.0781	00.0001	-00.1715	-00.1715	00.0000
09.5800	09.3000	00.1143	00.1144	-00.0001	-00.1715	-00.1714	-00.0000
07.4000	09.4100	00.1581	00.1583	-00.0002	-00.1779	-00.1778	-00.0000
07.3900	10.0100	00.1572	00.1572	-00.0000	-00.1897	-00.1896	-00.0000
05.3100	09.6800	00.2000	00.2001	-00.0001	-00.1871	-00.1871	00.0000
04.8000	09.7800	00.2097	00.2102	-00.0005	-00.1895	-00.1900	00.0005
12.5100	10.9100	00.0514	00.0516	-00.0002	-00.1969	-00.1971	00.0002
09.8600	10.4200	00.1064	00.1063	00.0000	-00.1929	-00.1929	00.0000
08.5500	10.4600	00.1326	00.1328	-00.0002	-00.1964	-00.1962	-00.0001
09.7000	11.2400	00.1079	00.1078	00.0000	-00.2091	-00.2093	00.0002
07.5200	10.9300	00.1525	00.1526	-00.0001	-00.2073	-00.2075	00.0002
04.8300	10.6900	00.2075	00.2076	-00.0001	-00.2079	-00.2079	00.0000
12.7800	11.9800	00.0441	00.0438	00.0002	-00.2169	-00.2176	00.0007
09.8500	11.7600	00.1037	00.1037	-00.0000	-00.2189	-00.2192	00.0003
13.6200	12.5900	00.0254	00.0255	-00.0001	-00.2277	-00.2278	00.0001
11.3500	12.4400	00.0720	00.0718	00.0001	-00.2294	-00.2295	00.0001
11.1300	12.1800	00.0765	00.0768	-00.0003	-00.2244	-00.2249	00.0005
09.5900	11.9800	00.1090	00.1085	00.0004	-00.2239	-00.2240	00.0001
04.7900	11.4300	00.2070	00.2068	00.0001	-00.2222	-00.2225	00.0003
04.1800	11.3000	00.2195	00.2195	-00.0000	-00.2211	-00.2210	-00.0000
09.8100	12.3400	00.1030	00.1032	-00.0002	-00.2304	-00.2307	00.0003
06.9100	12.4500	00.1615	00.1617	-00.0002	-00.2386	-00.2385	-00.0000
13.1900	13.7000	00.0320	00.0319	00.0000	-00.2504	-00.2504	00.0000
05.9700	12.6100	00.1804	00.1804	-00.0000	-00.2431	-00.2434	00.0003
08.9100	13.4900	00.1190	00.1190	-00.0000	-00.2549	-00.2550	00.0001
05.9900	13.3100	00.1784	00.1785	-00.0001	-00.2571	-00.2571	00.0000
10.4300	14.3200	00.0863	00.0865	-00.0002	-00.2683	-00.2682	-00.0000
08.7300	13.9500	00.1216	00.1217	-00.0001	-00.2642	-00.2643	00.0001
06.4500	13.8500	00.1685	00.1681	00.0003	-00.2666	-00.2668	00.0002
05.2000	13.7300	00.1938	00.1936	00.0001	-00.2670	-00.2668	-00.0001
11.2100	14.6800	00.0697	00.0699	-00.0002	-00.2739	-00.2736	-00.0002
04.7500	14.3300	00.2016	00.2014	00.0001	-00.2794	-00.2793	-00.0000
09.0400	14.9900	00.1132	00.1132	-00.0000	-00.2842	-00.2840	-00.0001
07.7300	15.0400	00.1397	00.1396	00.0000	-00.2879	-00.2875	-00.0003
06.3000	14.9200	00.1692	00.1688	00.0003	-00.2882	-00.2880	-00.0001
12.4400	15.7000	00.0430	00.0429	00.0000	-00.2916	-00.2910	-00.0005
06.8800	15.4000	00.1565	00.1561	00.0003	-00.2968	-00.2962	-00.0005
XSI RMS.=		.22940195E-03		ETA RMS.=		.24545928E-03	

CRATER	XSI	ETA	XINS	YINS	DIAM	Q	P	RMKS	REG
	.0265	.0204	14.89	00.19	005.6	A			C5A
	.0098	.0222	15.71	00.19	003.2	A			C5A
	.0075	.0200	15.81	00.31	007.0	A			C5A
	.1078	.0143	10.89	00.08	006.0	A			C5A
	.1056	.0105	10.98	00.28	003.5	A			C5A
	.1024	.0114	11.14	00.25	005.3	B		*1,2	C5A
	.0426	.0104	14.05	00.60	001.4	A			C5A
	.0416	.0122	14.11	00.52	001.4	A			C5A
	.0289	.0184	14.76	00.28	002.1	A			C5A
	-.0043	.0099	16.34	00.87	001.8	A			C5A
	.0013	.0023	16.02	01.22	002.8	A			C5A
	.0042	.0082	15.91	00.91	001.8	A			C5A
	.0235	.0042	14.95	01.01	002.5	B			C5A
	.0193	.0056	15.16	00.96	002.1	A			C5A
	.0319	.0029	14.53	01.03	001.4	B			C5A
	.0350	.0048	14.39	00.92	002.8	A			C5A
	.0393	.0086	14.20	00.71	002.5	A			C5A
	.0428	.0084	14.03	00.70	001.1	C			C5A
RHAETICUS	.0858	.0002	11.89	00.89	050.9	A		*1,3	C5A
	.0875	.0089	11.85	00.45	002.5	B			C5A
	.1029	.0086	11.10	00.39	003.5	A			C5A
	.1508	.0043	08.74	00.37	003.5	A			C5A
	.1683	.0068	07.90	00.16	002.5	B		*1	C5A
	.1708	.0017	07.75	00.40	021.1	C	B6	*4	C5A
OPPOLZER A	-.0053	-.0085	16.29	01.79	003.5	A			C5A
	.0143	-.0049	15.35	01.51	003.2	A			C5A
	.0256	-.0061	14.79	01.51	002.1	A			C5A
	.0285	-.0040	14.66	01.39	003.2	A			C5A
	.0338	-.0011	14.42	01.22	001.1	B			C5A
	.0359	-.0078	14.28	01.54	001.8	C			C5A
	.0380	-.0033	14.20	01.31	001.1	C			C5A
	.0444	-.0014	13.90	01.18	001.8	A			C5A
REAMUR D	.0488	-.0042	13.67	01.30	004.2	A			C5A
	.0513	-.0075	13.53	01.45	003.5	B			C5A
	.1007	-.0095	11.11	01.30	002.5	B			C5A
RHAETICUS E	.1042	-.0020	10.98	00.91	004.9	A			C5A
	.1108	-.0018	10.66	00.87	001.8	A			C5A
	.1587	-.0053	08.30	00.81	002.8	A			C5A
	.1575	-.0038	08.37	00.74	003.5	A			C5A
	.1658	-.0023	07.97	00.63	002.8	B			C5A
	.1873	-.0080	06.89	00.81	003.5	B		*1	C5A
	.0093	-.0130	15.55	01.94	002.5	C			C5A
	.0257	-.0146	14.74	01.93	001.1	B			C5A
	.0565	-.0121	13.25	01.65	003.2	B			C5A
	.0593	-.0110	13.12	01.58	002.8	C			C5A
	.0939	-.0173	11.40	01.72	004.9	A			C5A
LADE M	.1633	-.0193	08.00	01.48	010.9	A			C5A
	.1706	-.0182	07.65	01.39	001.1	C			C5A
OPPOLZER	-.0073	-.0252	16.30	02.63	042.1	B	B4		C5A
	-.0050	-.0246	16.19	02.59	002.5	A			C5A

CRATER	XSI	ETA	XINS	YINS	DIAM	Q	P	RMKS	REG
	-.0060	-.0298	16.21	02.85	002.8	A			C5A
	.0099	-.0224	15.47	02.40	003.9	A			C5A
	.0398	-.0243	14.00	02.34	002.1	A			C5A
	.0933	-.0247	11.39	02.09	001.8	A			C5A
	.1076	-.0266	10.68	02.11	003.9	A			C5A
E PICKERING A	.1231	-.0275	09.92	02.08	004.2	A			C5A
LADE	.1733	-.0214	07.50	01.54	051.6	A	B6	*5	C5A
	.1927	-.0261	06.53	01.68	001.4	A			C5A
	.0090	-.0326	15.46	02.91	002.8	A			C5A
	.0097	-.0335	15.42	02.95	002.1	B			C5A
	.0103	-.0341	15.39	02.98	001.1	B			C5A
	.0108	-.0346	15.36	03.00	002.5	B			C5A
	.0351	-.0335	14.18	02.82	001.8	A			C5A
	.0372	-.0370	14.06	02.98	003.5	A			C5A
SEELIGER	.0525	-.0383	13.31	02.97	009.5	A			C5A
SEELIGER A	.0537	-.0324	13.28	02.67	003.9	A			C5A
	.0678	-.0391	12.56	02.93	001.4	B			C5A
	.0757	-.0381	12.18	02.84	003.5	B			C5A
E PICKERING B	.1287	-.0363	09.60	02.49	006.3	A			C5A
	.1474	-.0325	08.71	02.21	002.8	B			C5A
	.1547	-.0312	08.36	02.11	003.5	A			C5A
	.1570	-.0376	08.21	02.42	002.5	B			C5A
	.1580	-.0367	08.17	02.37	001.8	B			C5A
	.1745	-.0389	07.35	02.40	002.8	B			C5A
	.1920	-.0301	06.54	01.88	003.2	A			C5A
REAMUR	.0117	-.0415	15.28	03.34	053.7	A	B5		C5A
E PICKERING	.1219	-.0497	09.86	03.19	016.2	A			C5A
	.1693	-.0412	07.59	02.54	003.5	A			C5A
	.1760	-.0481	07.23	02.85	002.5	A			C5A
	.1768	-.0458	07.20	02.73	002.1	A			C5A
	.1791	-.0474	07.08	02.80	002.1	B			C5A
SAUNDER C	.1827	-.0479	06.90	02.81	003.9	A			C5A
	.1894	-.0429	06.60	02.53	002.5	A			C5A
	.1942	-.0402	06.38	02.37	003.2	B			C5A
	.0019	-.0540	15.69	04.01	003.5	A			C5A
	.0034	-.0554	15.61	04.07	003.9	A			C5A
	.0395	-.0575	13.84	03.99	002.5	B			C5A
	.0481	-.0562	13.43	03.88	003.5	A			C5A
	.0832	-.0549	11.72	03.64	003.2	C			C5A
REAMUR C	.0037	-.0608	15.57	04.34	004.2	B			C5A
	.0165	-.0694	14.90	04.70	006.0	B			C5A
	.0181	-.0659	14.84	04.52	006.7	A			C5A
	.0242	-.0644	14.55	04.41	002.8	A			C5A
	.0247	-.0602	14.55	04.20	031.6	A			C5A
	.0269	-.0643	14.42	04.39	002.1	A			C5A
	.0302	-.0656	14.25	04.44	003.5	A			C5A
	.0309	-.0671	14.21	04.51	003.5	A			C5A
	.0354	-.0651	14.00	04.39	004.6	B			C5A
	.0750	-.0628	12.08	04.07	003.5	B			C5A
	.0757	-.0695	12.01	04.40	002.8	A			C5A

CRATER	XSI	ETA	XINS	YINS	DIAM	Q	P	RMKS	REG
HORROCKS	.1020	-.0687	10.73	04.23	029.9	A	B4		C5A
	.1470	-.0677	08.54	03.96	002.8	B			C5A
	.1514	-.0685	08.32	03.98	002.5	B			C5A
	.1515	-.0677	08.32	03.94	001.8	B			C5A
SAUNDER B	.1703	-.0683	07.40	03.88	006.3	A	C		C5A
	.1747	-.0687	07.18	03.88	002.8	B			C5A
	.1791	-.0677	06.97	03.81	003.9	C			C5A
REAMUR A	.0044	-.0749	15.46	05.04	015.8	A			C5A
	.0047	-.0798	15.42	05.28	002.8	B			C5A
	.0126	-.0748	15.06	04.99	003.2	A			C5A
REAMUR B	.0150	-.0739	14.95	04.93	002.8	A			C5A
	.0241	-.0724	14.51	04.81	001.8	C			C5A
HIPPARCHUS D	.0367	-.0773	13.87	04.99	004.9	A			C5A
HIPPARCHUS E	.0392	-.0734	13.77	04.78	006.0	A			C5A
HIPPARCHUS F	.0434	-.0728	13.57	04.73	009.8	A			C5A
	.0469	-.0786	13.37	05.00	002.1	B			C5A
	.0491	-.0712	13.30	04.62	003.5	A			C5A
	.0536	-.0751	13.06	04.79	002.8	B			C5A
	.0571	-.0732	12.90	04.68	002.8	B			C5A
	.0613	-.0754	12.68	04.77	001.4	C			C5A
	.0615	-.0716	12.69	04.58	001.8	B			C5A
	.0643	-.0723	12.55	04.60	002.5	B			C5A
	.0687	-.0720	12.34	04.56	001.1	C			C5A
	.0697	-.0705	12.30	04.48	001.1	C			C5A
	.0715	-.0739	12.19	04.64	002.8	A			C5A
	.0832	-.0704	11.64	04.41	002.1	B			C5A
HORROCKS M	.1327	-.0707	09.22	04.18	004.9	A			C5A
	.1345	-.0773	09.10	04.50	001.4	C			C5A
	.1373	-.0742	08.98	04.33	004.9	C			C5A
SAUNDER	.1513	-.0735	08.30	04.23	045.0	B	A5		C5A
	.1746	-.0715	07.17	04.02	002.5	B			C5A
	.1760	-.0717	07.10	04.02	003.2	B			C5A
	.1803	-.0702	06.90	03.93	007.0	A			C5A
	.1835	-.0780	06.70	04.30	002.8	A			C5A
	.0184	-.0818	14.74	05.31	002.8	B			C5A
	.0415	-.0828	13.61	05.24	004.2	B			C5A
	.0428	-.0856	13.53	05.37	003.2	C			C5A
HIPPARCHUS P	.0470	-.0826	13.34	05.20	006.0	A			C5A
HIPPARCHUS N	.0868	-.0840	11.39	05.07	006.3	A			C5A
	.0966	-.0880	10.89	05.22	001.4	B			C5A
	.0975	-.0875	10.85	05.19	001.8	A			C5A
	.0979	-.0817	10.86	04.90	001.4	B			C5A
	.1036	-.0843	10.57	05.00	002.1	A			C5A
	.1041	-.0874	10.53	05.15	003.5	A			C5A
HIPPARCHUS G	.1289	-.0872	09.32	05.02	015.5	A			C5A
HIPPARCHUS W	.1347	-.0882	09.03	05.04	003.9	A			C5A
	.1422	-.0833	08.69	04.76	006.3	A			C5A
	.1809	-.0832	06.80	04.57	001.4	B			C5A
	.1956	-.0817	06.09	04.43	002.8	B			C5A
	.0005	-.0958	15.54	06.10	001.4	B			C5A

CRATER	XSI	ETA	XINS	YINS	DIAM	Q	P	RMKS	REG
GYLDEN	.0048	-.0922	15.35	05.90	049.2	A	A5		C5A
	.0109	-.0947	15.04	05.99	005.3	A			C5A
	.0336	-.0969	13.92	05.98	003.2	A			C5A
	.0348	-.0918	13.89	05.72	002.8	A			C5A
	.0395	-.0993	13.62	06.07	004.9	C			C5A
HIPPARCHUS H	.0399	-.0951	13.62	05.86	004.6	A	B4		C5A
	.0435	-.0983	13.43	06.00	002.1	C			C5A
	.0445	-.0904	13.42	05.60	002.5	C			C5A
	.0486	-.0946	13.20	05.79	002.8	C			C5A
HIPPARCHUS	.0879	-.0908	11.30	05.40	147.5	A			C5A
	.1591	-.0951	07.80	05.27	003.5	A			C5A
	.1638	-.0902	07.60	05.00	001.8	C			C5A
	.1963	-.0904	06.01	04.86	002.1	B			C5A
	.0052	-.1057	15.26	06.57	006.7	C			C5A
	.0113	-.1042	14.97	06.46	003.2	B			C5A
	.0141	-.1083	14.81	06.65	003.2	C			C5A
	.0174	-.1024	14.68	06.34	005.3	A			C5A
	.0363	-.1040	13.75	06.32	002.8	C			C5A
	.0375	-.1003	13.71	06.13	002.5	A			C5A
	.0408	-.1006	13.55	06.13	003.2	B			C5A
	.0424	-.1098	13.42	06.58	002.8	C			C5A
	.0558	-.1036	12.80	06.20	001.1	B			C5A
	.0619	-.1078	12.48	06.38	009.1	B			C5A
	.0883	-.1097	11.18	06.34	003.5	B			C5A
	.1130	-.1017	10.02	05.82	001.4	B	A4		C5A
	.1436	-.1045	08.51	05.81	002.5	B			C5A
	.1458	-.1085	08.38	06.00	001.4	B			C5A
	.1486	-.1052	08.26	05.82	001.8	C			C5A
	.1651	-.1085	07.44	05.91	003.2	B			C5A
	.1692	-.1043	07.26	05.68	009.8	C			C5A
	.1954	-.1060	05.97	05.64	001.1	B			C5A
ANDEL K	.1998	-.1012	05.78	05.38	003.9	A			C5A
	.0144	-.1131	14.77	06.89	002.5	B			C5A
	.0152	-.1110	14.74	06.78	003.2	B			C5A
HIPPARCHUS U	.0619	-.1176	12.43	06.87	008.1	A	C4		C5A
	.0663	-.1130	12.24	06.62	003.5	C			C5A
	.0950	-.1199	10.80	06.82	003.5	C			C5A
	.1097	-.1148	10.11	06.49	001.4	B			C5A
	.1329	-.1125	08.99	06.26	004.9	B			C5A
	.1472	-.1182	08.26	06.48	001.1	B			C5A
HIPPARCHUS L	.1557	-.1191	07.84	06.48	013.3	A			C5A
	.1572	-.1144	07.79	06.24	001.4	B			C5A
	.1669	-.1105	07.34	06.00	007.7	B			C5A
	.1678	-.1136	07.28	06.15	001.4	C			C5A
ANDEL H	.1952	-.1156	05.93	06.12	006.3	A			C5A
	.1975	-.1134	05.83	06.00	001.1	C			C5A
	.1999	-.1192	05.68	06.28	002.5	A			C5A
	.2010	-.1149	05.65	06.06	003.5	A			C5A
	.0087	-.1281	14.97	07.67	005.6	B			C5A
HIPPARCHUS B	.0305	-.1214	13.94	07.22	006.3	A			C5A

CRATER	XSI	ETA	XINS	YINS	DIAM	Q	P	RMKS	REG
HIPPARCHUS K	.0375	-.1209	13.60	07.16	011.9	A			C5A
	.0421	-.1206	13.38	07.12	005.6	A			C5A
HIPPARCHUS T	.0620	-.1238	12.39	07.18	007.0	A			C5A
	.0634	-.1260	12.31	07.28	004.2	C			C5A
	.0714	-.1204	11.95	06.96	002.5	B			C5A
	.0753	-.1262	11.73	07.23	010.2	B			C5A
	.1012	-.1212	10.49	06.85	001.4	C			C5A
HIPPARCHUS C	.1420	-.1285	08.46	07.02	017.2	A			C5A
ANDEL B	.1722	-.1272	06.99	06.81	007.4	B			C5A
	.1973	-.1210	05.80	06.38	002.1	B			C5A
	.0098	-.1346	14.88	07.99	004.2	B			C5A
	.0180	-.1325	14.49	07.84	005.3	B			C5A
	.0204	-.1331	14.37	07.86	004.6	B			C5A
	.0227	-.1346	14.25	07.92	006.0	A			C5A
	.0274	-.1316	14.04	07.75	003.9	B			C5A
MULLER	.0355	-.1325	13.64	07.75	021.8	A	C		C5A
MULLER O	.0425	-.1370	13.27	07.94	010.5	A			C5A
	.0451	-.1339	13.16	07.77	001.4	C			C5A
	.0519	-.1398	12.80	08.03	003.5	A			C5A
HIPPARCHUS J	.0554	-.1315	12.67	07.60	014.4	A			C5A
	.0657	-.1356	12.15	07.75	003.5	B			C5A
	.0674	-.1330	12.08	07.61	003.5	C			C5A
	.0767	-.1377	11.60	07.80	003.2	B			C5A
	.0793	-.1364	11.48	07.72	003.2	B			C5A
	.0890	-.1373	11.00	07.72	002.1	B			C5A
HALLEY	.1000	-.1384	10.46	07.72	035.5	A			C5A
	.1082	-.1326	10.09	07.39	003.9	A			C5A
	.1093	-.1370	10.01	07.60	002.8	A			C5A
	.1118	-.1392	09.88	07.70	003.5	B			C5A
	.0151	-.1352	14.62	07.99	003.5	C			C5A
HIND	.1264	-.1364	09.18	07.49	028.1	A		*1,6	C5A
	.1549	-.1326	07.81	07.16	003.2	A			C5A
	.1563	-.1303	07.75	07.04	003.2	A			C5A
	.1637	-.1374	07.35	07.36	007.7	C			C5A
	.1753	-.1307	06.82	06.97	004.9	B			C5A
	.1773	-.1313	06.72	06.99	004.2	B			C5A
	.1780	-.1396	06.64	07.40	001.1	C			C5A
ANDEL J	.1964	-.1309	05.79	06.88	006.0	A			C5A
	.2087	-.1320	05.18	06.88	006.0	A			C5A
	.0241	-.1485	14.11	08.61	004.2	B			C5A
	.0282	-.1443	13.93	08.38	002.8	B			C5A
MULLER A	.0369	-.1418	13.52	08.21	010.5	A			C5A
	.0432	-.1423	13.21	08.20	005.6	B			C5A
	.0438	-.1403	13.19	08.10	004.9	B			C5A
	.0466	-.1416	13.05	08.15	006.0	B			C5A
HIPPARCHUS Q	.0500	-.1476	12.85	08.43	008.4	A			C5A
	.0518	-.1447	12.78	08.28	004.2	A			C5A
	.0544	-.1426	12.66	08.16	004.2	A			C5A
	.0564	-.1400	12.58	08.02	006.3	A			C5A
	.0574	-.1433	12.51	08.18	005.3	A			C5A

CRATER	XSI	ETA	XINS	YINS	DIAM	Q	P	RMKS	REG
HALLEY B	.0609	-.1435	12.34	08.17	003.2	A			C5A
	.0777	-.1474	11.50	08.28	006.3	B			C5A
	.0910	-.1495	10.84	08.32	002.8	B			C5A
	.1006	-.1491	10.37	08.25	006.7	C			C5A
	.1160	-.1492	09.62	08.18	003.9	B			C5A
	.1166	-.1439	09.62	07.91	001.4	B			C5A
HIPPARCHUS Z	.1201	-.1474	09.43	08.07	003.2	B			C5A
	.1392	-.1471	08.50	07.96	002.1	B			C5A
	.1558	-.1484	07.68	07.95	006.3	A			C5A
	.1626	-.1441	07.37	07.70	008.4	C			C5A
	.1683	-.1409	07.11	07.51	003.5	B			C5A
	.1713	-.1469	06.93	07.80	001.4	B			C5A
	.1757	-.1457	06.72	07.72	001.4	C			C5A
	.1802	-.1400	06.53	07.41	001.1	A			C5A
	.1815	-.1439	06.45	07.60	002.1	B			C5A
	.1904	-.1447	06.01	07.60	009.8	A			C5A
ANDEL F	.1924	-.1415	05.93	07.43	003.5	A			C5A
	.1965	-.1429	05.72	07.48	002.1	B			C5A
	.1981	-.1468	05.62	07.67	004.9	B			C5A
	.2041	-.1460	05.33	07.60	002.1	C			C5A
	.0232	-.1589	14.10	09.14	004.9	A			C5A
	.0361	-.1551	13.49	08.88	002.8	B			C5A
	.0381	-.1537	13.40	08.80	002.8	A			C5A
	.0491	-.1544	12.86	08.78	003.9	B			C5A
	.0495	-.1521	12.85	08.66	004.2	B			C5A
	.0534	-.1595	12.62	09.01	006.7	C			C5A
	.0563	-.1522	12.52	08.63	003.5	A			C5A
	.0586	-.1536	12.40	08.69	004.2	A			C5A
	.0590	-.1594	12.35	08.98	002.5	B			C5A
	.0632	-.1563	12.16	08.80	004.2	A			C5A
	.0632	-.1597	12.14	08.97	005.6	A			C5A
	.0694	-.1505	11.89	08.48	003.5	B			C5A
	.0719	-.1550	11.74	08.69	008.8	A			C5A
	.0729	-.1597	11.67	08.92	004.6	B			C5A
ALBATEGNIUS M	.0857	-.1570	11.06	08.72	003.2	C			C5A
	.0962	-.1596	10.53	08.80	004.2	C		*1	C5A
	.1202	-.1576	09.37	08.58	002.5	B			C5A
	.1285	-.1512	09.00	08.22	007.0	A			C5A
HIND C	.1709	-.1507	06.93	07.99	002.1	A			C5A
ANDEL C	.1913	-.1564	05.90	08.18	003.9	A			C5A
PTOLEMAEUS Y	.0125	-.1626	14.60	09.38	006.3	A			C5A
	.0327	-.1639	13.61	09.34	014.8	A			C5A
	.0529	-.1620	12.63	09.14	007.4	B			C5A
	.0657	-.1635	12.00	09.15	004.2	B			C5A
	.0669	-.1620	11.95	09.07	002.8	A			C5A
	.0712	-.1617	11.74	09.03	004.2	A			C5A
	.0728	-.1640	11.65	09.14	004.2	A			C5A
	.0728	-.1662	11.64	09.25	001.8	A			C5A
	.0755	-.1677	11.50	09.31	007.0	A			C5A
	.0952	-.1669	10.54	09.17	002.8	C			C5A

CRATER	XSI	ETA	XINS	YINS	DIAM	Q	P	RMKS	REG
	.0971	-.1681	10.44	09.22	003.2	C		*1	C5A
	.1117	-.1695	09.72	09.22	003.5	B			C5A
	.1246	-.1682	09.10	09.09	003.5	B			C5A
	.1268	-.1630	09.02	08.82	005.6	B			C5A
	.1295	-.1603	08.90	08.67	003.2	C			C5A
	.1306	-.1674	08.81	09.02	011.2	B	B6		C5A
	.1565	-.1681	07.54	08.93	002.5	C			C5A
	.1616	-.1668	07.30	08.84	002.5	B			C5A
	.1697	-.1651	06.91	08.72	002.8	C			C5A
	.1756	-.1621	06.64	08.54	002.5	C			C5A
	.1866	-.1603	06.11	08.40	001.4	C			C5A
	.1903	-.1695	05.88	08.84	028.4	C	C	*7	C5A
	.2060	-.1679	05.12	08.69	002.5	C			C5A
	.0288	-.1751	13.74	09.92	003.9	B			C5A
	.0349	-.1713	13.46	09.70	010.2	A			C5A
	.0483	-.1787	12.77	10.00	005.6	B			C5A
	.0501	-.1713	12.72	09.62	006.3	B			C5A
	.0544	-.1731	12.50	09.69	003.2	C			C5A
	.0582	-.1739	12.31	09.71	006.7	C			C5A
	.0625	-.1740	12.10	09.69	001.8	C			C5A
ALBATEGNIUS C	.0640	-.1789	12.00	09.93	006.7	A			C5A
ALBATEGNIUS B	.0694	-.1748	11.76	09.70	017.9	A		*1,8	C5A
	.0708	-.1746	11.69	09.68	003.9	A			C5A
ALBATEGNIUS N	.0781	-.1715	11.35	09.49	009.8	A			C5A
	.1005	-.1730	10.25	09.45	004.2	B			C5A
HALLEY C	.1144	-.1714	09.58	09.30	003.9	A			C5A
	.1150	-.1788	09.51	09.67	005.3	A			C5A
	.1355	-.1790	08.51	09.58	002.8	A			C5A
	.1371	-.1788	08.43	09.56	002.1	B			C5A
	.1401	-.1780	08.29	09.51	009.1	A	B5		C5A
	.1434	-.1776	08.13	09.47	001.8	B			C5A
	.1579	-.1724	07.45	09.14	002.8	C			C5A
RITCHEY D	.1583	-.1778	07.40	09.41	007.0	A			C5A
	.1779	-.1763	06.45	09.24	006.7	A			C5A
	.1941	-.1776	05.65	09.23	008.1	A			C5A
	.0487	-.1827	12.73	10.20	002.8	A			C5A
	.0504	-.1815	12.65	10.13	002.8	C			C5A
	.0516	-.1802	12.60	10.06	002.5	C			C5A
	.1265	-.1881	08.90	10.08	002.8	A			C5A
	.1299	-.1832	08.76	09.82	001.8	B			C5A
	.1314	-.1824	08.69	09.77	004.2	A			C5A
	.1326	-.1889	08.60	10.09	002.8	B			C5A
	.1337	-.1818	08.58	09.73	002.1	B			C5A
	.1431	-.1859	08.10	09.89	012.6	B	B4		C5A
RITCHEY C	.1572	-.1896	07.39	10.01	006.3	A			C5A
ANDEL A	.1921	-.1873	05.70	09.73	013.7	B			C5A
ANDEL D	.2001	-.1871	05.31	09.68	006.3	A			C5A
ANDEL	.2114	-.1808	04.79	09.31	033.7	A	B4		C5A
	.0397	-.1953	13.10	10.88	002.8	A			C5A
	.0462	-.1936	12.79	10.76	003.9	B			C5A

CRATER	XSI	ETA	XINS	YINS	DIAM	Q	P	RMKS	REG
	.0508	-.1931	12.57	10.71	002.5	C			C5A
KLEIN A	.0516	-.1971	12.51	10.91	009.1	A			C5A
ALBATEGNIUS	.0696	-.1932	11.65	10.62	135.9	A	B6	*6	C5A
	.0763	-.1976	11.30	10.81	001.1	A			C5A
	.0786	-.1941	11.21	10.62	002.8	A			C5A
	.0868	-.1957	10.80	10.66	002.1	A			C5A
ALBATEGNIUS J	.1063	-.1929	09.86	10.42	006.3	B			C5A
	.1089	-.1955	09.72	10.54	006.3	B			C5A
	.1096	-.1983	09.67	10.68	002.8	A			C5A
	.1186	-.1984	09.23	10.64	003.9	C			C5A
	.1195	-.1926	09.22	10.34	004.2	A			C5A
	.1203	-.1998	09.14	10.70	003.5	B			C5A
ALBATEGNIUS D	.1221	-.1964	09.07	10.52	009.5	B	B5		C5A
	.1259	-.1952	08.89	10.44	004.6	B			C5A
RITCHEY A	.1328	-.1962	08.55	10.46	005.3	A			C5A
	.1337	-.1916	08.53	10.22	003.9	A			C5A
RITCHEY	.1444	-.1926	08.00	10.22	024.6	C	A4		C5A
	.1466	-.1914	07.90	10.15	002.5	A			C5A
	.1497	-.1985	07.71	10.49	002.5	C			C5A
	.1690	-.1959	06.78	10.27	002.8	A			C5A
	.1714	-.1934	06.68	10.13	016.9	B	A4		C5A
	.1837	-.1985	06.05	10.33	006.3	B			C5A
	.1891	-.1958	05.80	10.17	002.1	C			C5A
	.0462	-.1936	12.79	10.76	003.9	B			C5A
	.2081	-.1962	04.87	10.10	003.5	A			C5A
ANDEL G	.2102	-.1900	04.80	09.78	004.2	A			C5A
	.2161	-.1973	04.47	10.12	004.6	A			C5A
	.0244	-.2007	13.82	11.23	026.3	C	B4		C5A
	.0298	-.2090	13.51	11.62	003.5	C			C5A
	.0373	-.2066	13.16	11.46	003.5	C			C5A
KLEIN	.0441	-.2075	12.82	11.47	045.7	A	B6	*6	C5A
	.0442	-.2011	12.85	11.15	001.4	B			C5A
	.0459	-.2003	12.77	11.10	001.8	B			C5A
	.0716	-.2033	11.50	11.12	002.5	A			C5A
	.0788	-.2122	11.10	11.53	001.1	C		*9	C5A
	.0792	-.2055	11.12	11.19	004.2	C		*9	C5A
	.0807	-.2003	11.07	10.92	003.5	C		*9	C5A
	.0863	-.2062	10.77	11.19	001.4	C			C5A
	.0930	-.2046	10.45	11.08	001.8	B			C5A
ALBATEGNIUS L	.1078	-.2093	09.70	11.24	007.4	A			C5A
	.1258	-.2097	08.82	11.17	002.8	B			C5A
	.1398	-.2013	08.18	10.68	003.5	B			C5A
	.1439	-.2090	07.94	11.05	010.2	B	C		C5A
RITCHEY B	.1526	-.2075	07.52	10.93	007.0	A			C5A
	.1535	-.2030	07.50	10.70	006.3	B			C5A
	.1568	-.2013	07.35	10.60	002.8	A			C5A
	.1840	-.2013	06.02	10.47	003.9	C			C5A
	.1979	-.2030	05.33	10.49	001.8	C			C5A
	.2071	-.2016	04.89	10.38	017.9	B	B5		C5A
ANDEL E	.2076	-.2079	04.83	10.69	006.3	A			C5A

CRATER	XSI	ETA	XINS	YINS	DIAM	Q	P	RMKS	REG
	.0285	-.2100	13.57	11.68	002.5	B			C5A
	.0305	-.2164	13.44	11.99	004.9	B	B4		C5A
	.0349	-.2172	13.22	12.01	004.2	B			C5A
	.0350	-.2103	13.25	11.66	003.9	C			C5A
	.0369	-.2137	13.14	11.82	003.5	C			C5A
KLEIN C	.0438	-.2176	12.78	11.98	006.7	A			C5A
	.0727	-.2123	11.40	11.57	001.4	C			C5A
	.0836	-.2192	10.83	11.86	003.5	B			C5A
	.0965	-.2193	10.20	11.80	002.5	C			C5A
	.1062	-.2147	09.75	11.52	003.2	A			C5A
ALBATEGNIUS T	.1037	-.2192	09.85	11.76	010.5	B	B6		C5A
	.1202	-.2176	09.05	11.60	002.8	A			C5A
	.1356	-.2152	08.31	11.40	002.1	C			C5A
	.1458	-.2118	07.83	11.18	003.2	C			C5A
	.1500	-.2148	07.61	11.31	002.8	A			C5A
	.1514	-.2191	07.52	11.52	001.8	B			C5A
	.1516	-.2117	07.55	11.15	008.1	C	C		C5A
	.1564	-.2182	07.28	11.45	005.3	B			C5A
	.1593	-.2190	07.13	11.48	003.9	C			C5A
	.1615	-.2143	07.05	11.23	008.1	A			C5A
	.1623	-.2197	06.98	11.50	005.3	C			C5A
	.1776	-.2170	06.25	11.29	004.2	B			C5A
	.1828	-.2163	06.00	11.23	003.5	A			C5A
	.1871	-.2197	05.77	11.38	001.1	C			C5A
	.1974	-.2113	05.31	10.91	002.5	B			C5A
	.2077	-.2140	04.79	11.00	012.3	C		*7	C5A
	.0149	-.2298	14.13	12.75	024.6	B	B6		C5A
PARROT W	.0255	-.2278	13.62	12.59	006.3	A			C5A
	.0266	-.2221	13.60	12.30	002.8	B			C5A
	.0278	-.2219	13.54	12.28	002.5	C			C5A
	.0297	-.2215	13.45	12.25	002.8	B			C5A
	.0359	-.2229	13.14	12.29	003.9	C			C5A
	.0372	-.2218	13.08	12.23	003.5	B			C5A
	.0402	-.2251	12.92	12.38	006.3	A			C5A
	.0403	-.2279	12.90	12.52	004.6	B			C5A
	.0479	-.2221	12.56	12.19	005.6	A			C5A
ALBATEGNIUS O	.0718	-.2295	11.35	12.44	006.3	B			C5A
	.0750	-.2286	11.20	12.38	001.4	B			C5A
ALBATEGNIUS P	.0768	-.2249	11.13	12.18	005.6	B			C5A
	.0777	-.2281	11.07	12.34	002.5	B			C5A
	.0949	-.2249	10.25	12.09	002.8	C			C5A
	.0956	-.2273	10.20	12.21	003.2	A			C5A
	.0992	-.2223	10.05	11.94	003.2	A			C5A
	.1003	-.2242	09.99	12.03	006.0	B			C5A
ALBATEGNIUS E	.1085	-.2240	09.59	11.98	014.0	A			C5A
	.1267	-.2272	08.68	12.05	002.1	C			C5A
	.1370	-.2286	08.17	12.07	001.4	B			C5A
	.1471	-.2264	07.69	11.91	002.5	C			C5A
	.1475	-.2244	07.68	11.81	002.5	C			C5A
	.1546	-.2214	07.35	11.62	002.1	B			C5A

CRATER	XSI	ETA	XINS	YINS	DIAM	Q	P	RMKS	REG
ABULFEDA D	.1606	-.2285	07.02	11.95	020.0	B	B4		C5A
	.1727	-.2278	06.43	11.86	005.3	B			C5A
	.1741	-.2260	06.37	11.76	004.2	B			C5A
	.0815	-.2249	10.90	12.16	003.2	C			C5A
	.1820	-.2218	06.01	11.51	002.8	C			C5A
	.0837	-.2222	10.81	12.01	004.2	B	B6		C5A
ABULFEDA C	.1841	-.2212	05.91	11.47	016.5	A			C5A
	.0852	-.2289	10.70	12.34	004.2	A			C5A
	.1875	-.2219	05.74	11.49	002.8	B			C5A
	.1958	-.2224	05.33	11.48	002.5	B			C5A
	.1984	-.2213	05.21	11.41	001.8	B			C5A
	.2010	-.2215	05.08	11.41	001.1	C			C5A
	.2021	-.2208	05.03	11.37	004.2	A			C5A
ABULFEDA Q	.2068	-.2225	04.79	11.43	003.5	A			C5A
	.2079	-.2299	04.70	11.80	002.1	C			C5A
ABULFEDA R	.2195	-.2210	04.18	11.30	006.7	A	C		C5A
	.0302	-.2334	13.36	12.85	003.2	B			C5A
	.0350	-.2369	13.11	13.00	003.9	B			C5A
	.0352	-.2327	13.12	12.79	014.0	A			C5A
	.0410	-.2398	12.80	13.12	006.7	A			C5A
	.0466	-.2337	12.56	12.78	002.8	B			C5A
PARROT R	.0537	-.2340	12.21	12.76	011.9	A			C5A
	.0578	-.2360	12.00	12.84	001.1	C			C5A
	.0583	-.2369	11.97	12.88	001.1	C			C5A
	.0614	-.2392	11.81	12.98	006.0	B			C5A
	.0631	-.2308	11.77	12.55	006.7	B			C5A
	.0689	-.2340	11.47	12.68	004.6	C			C5A
	.0779	-.2382	11.01	12.85	007.4	A			C5A
	.0974	-.2388	10.05	12.78	002.8	B			C5A
	.1001	-.2347	09.94	12.56	002.5	B			C5A
ALBATEGNIUS S BURNHAM	.1032	-.2307	09.81	12.34	006.7	A	B4	*10	C5A
	.1235	-.2398	08.77	12.70	020.0	C			C5A
	.1257	-.2364	08.68	12.52	003.5	A			C5A
	.1264	-.2341	08.66	12.40	002.8	B			C5A
	.1341	-.2331	08.29	12.31	003.2	A			C5A
	.1358	-.2384	08.18	12.57	001.4	A			C5A
	.1448	-.2383	07.74	12.52	003.5	B			C5A
	.1512	-.2315	07.46	12.15	001.1	C			C5A
	.1516	-.2304	07.45	12.09	002.8	B			C5A
	.1570	-.2390	07.14	12.50	003.2	B			C5A
ABULFEDA H	.1617	-.2385	06.91	12.45	004.6	A			C5A
	.1726	-.2381	06.38	12.38	001.4	C			C5A
	.1738	-.2386	06.32	12.40	001.4	C			C5A
	.1789	-.2363	06.08	12.26	001.4	C			C5A
	.1801	-.2386	06.01	12.37	003.5	A			C5A
	.2088	-.2324	04.64	11.92	003.2	C			C5A
	.2111	-.2359	04.51	12.09	004.9	B			C5A
	.0241	-.2413	13.62	13.28	003.2	A			C5A
PARROT K	.0294	-.2432	13.35	13.35	045.7	B	C		C5A
	.0417	-.2431	12.75	13.28	007.4	A			C5A

CRATER	XSI	ETA	XINS	YINS	DIAM	Q	P	RMKS	REG
	.0608	-.2403	11.83	13.04	002.5	C			C5A
	.0617	-.2455	11.76	13.30	021.4	A	B4		C5A
	.0670	-.2498	11.48	13.49	002.5	B			C5A
PARROT U	.0759	-.2426	11.08	13.08	009.5	A	B4		C5A
	.0759	-.2450	11.07	13.20	003.5	C			C5A
	.0898	-.2428	10.40	13.02	009.8	A	C		C5A
VOGEL A	.0950	-.2425	10.15	12.98	009.8	A	B5		C5A
	.0970	-.2485	10.02	13.27	021.4	A	B4	*6	C5A
	.1007	-.2425	09.87	12.95	003.9	A			C5A
	.1023	-.2434	09.79	12.99	002.1	C			C5A
BURNHAM F	.1163	-.2476	09.08	13.13	009.5	A	A5		C5A
	.1233	-.2435	08.76	12.89	001.1	B			C5A
	.1235	-.2461	08.74	13.02	001.4	A			C5A
	.1281	-.2467	08.51	13.03	003.9	A			C5A
	.1316	-.2443	08.35	12.89	001.4	B			C5A
	.1414	-.2484	07.85	13.05	001.1	C			C5A
	.1503	-.2457	07.43	12.87	003.2	B			C5A
	.1527	-.2440	07.32	12.77	009.5	A	B6		C5A
	.1523	-.2483	07.32	12.99	003.5	A			C5A
	.1547	-.2467	07.21	12.90	003.5	B			C5A
	.1611	-.2404	06.93	12.55	002.1	A			C5A
	.1665	-.2417	06.66	12.59	001.4	C			C5A
	.1712	-.2473	06.40	12.85	004.6	B			C5A
ABULFEDA L	.1804	-.2434	05.97	12.61	005.3	A			C5A
	.1818	-.2455	05.89	12.71	003.5	A			C5A
	.1832	-.2482	05.81	12.84	003.2	C			C5A
	.1834	-.2419	05.83	12.52	001.4	C			C5A
	.1921	-.2411	05.41	12.44	003.2	A			C5A
	.1936	-.2427	05.33	12.51	003.9	B			C5A
	.2061	-.2440	04.71	12.52	002.5	C			C5A
	.2118	-.2402	04.45	12.30	003.9	B			C5A
	.0213	-.2550	13.68	13.99	003.2	B			C5A
	.0270	-.2536	13.41	13.89	006.7	B			C5A
PARROT X	.0319	-.2504	13.19	13.70	004.2	A			C5A
PARROT	.0562	-.2511	12.00	13.61	069.9	A	B6		C5A
	.0659	-.2507	11.53	13.54	002.1	B			C5A
	.0667	-.2525	11.48	13.63	002.8	B			C5A
	.0912	-.2548	10.27	13.62	001.4	C			C5A
VOGEL	.0997	-.2594	09.83	13.81	027.7	A	B4	*6	C5A
	.1055	-.2536	09.58	13.49	003.5	B			C5A
	.1129	-.2567	09.20	13.61	001.4	C			C5A
	.1142	-.2565	09.14	13.59	002.5	B			C5A
	.1154	-.2548	09.09	13.50	003.2	A			C5A
	.1171	-.2572	08.99	13.61	002.5	B			C5A
	.1186	-.2527	08.94	13.38	003.9	B			C5A
BURNHAM A	.1190	-.2550	08.91	13.49	007.0	A	B4		C5A
	.1235	-.2534	08.70	13.39	002.8	A			C5A
	.1427	-.2590	07.73	13.58	001.1	C			C5A
	.1598	-.2524	06.93	13.16	003.5	B			C5A
	.1738	-.2574	06.22	13.35	009.1	A			C5A

CRATER	XSI	ETA	XINS	YINS	DIAM	Q	P	RMKS	REG
ABULFEDA K	.1785	-.2571	05.99	13.31	008.4	A	B4		C5A
	.1816	-.2530	05.86	13.09	003.5	A			C5A
	.1832	-.2575	05.76	13.31	007.0	A			C5A
	.1846	-.2515	05.72	13.00	003.9	A			C5A
	.1958	-.2541	05.16	13.08	001.8	C			C5A
	.1994	-.2584	04.96	13.28	003.9	A			C5A
	.2028	-.2572	04.80	13.20	002.5	B			C5A
	.2118	-.2540	04.38	13.00	001.8	A			C5A
	.2179	-.2504	04.10	12.79	003.5	A			C5A
	.2208	-.2576	03.92	13.14	004.2	B			C5A
	.2227	-.2566	03.83	13.08	001.4	C			C5A
	.0296	-.2699	13.20	14.70	010.5	B			C5A
PARROT A	.0356	-.2636	12.94	14.35	021.1	A	B5		C5A
	.0399	-.2692	12.70	14.61	004.6	A			C5A
	.0677	-.2675	11.35	14.38	007.7	B	B4		C5A
	.0754	-.2623	11.00	14.08	003.9	B			C5A
	.0834	-.2643	10.60	14.14	004.2	A			C5A
ARGELANDER B	.0865	-.2682	10.43	14.32	006.7	B			C5A
	.1153	-.2627	09.05	13.90	001.8	C			C5A
BURNHAM B	.1217	-.2643	08.73	13.95	003.9	A			C5A
	.1225	-.2624	08.70	13.85	003.5	C			C5A
	.1286	-.2610	08.41	13.75	001.4	B			C5A
	.1364	-.2604	08.03	13.68	002.8	A			C5A
	.1425	-.2632	07.72	13.79	003.5	A			C5A
	.1573	-.2622	07.00	13.67	003.2	B			C5A
	.1583	-.2641	06.94	13.76	001.4	B			C5A
	.1588	-.2669	06.90	13.90	003.5	A			C5A
	.1604	-.2660	06.83	13.85	004.2	A			C5A
	.1621	-.2654	06.75	13.81	001.4	C			C5A
	.1652	-.2645	06.60	13.75	001.1	C			C5A
	.1672	-.2612	06.52	13.57	003.5	A			C5A
	.1672	-.2653	06.50	13.78	001.1	B			C5A
ABULFEDA J	.1681	-.2668	06.45	13.85	003.9	A			C5A
	.1713	-.2611	06.32	13.55	002.8	B			C5A
	.1714	-.2627	06.31	13.63	002.1	B			C5A
ABULFEDA O	.1869	-.2662	05.53	13.73	007.0	A	B4		C5A
ABULFEDA P	.1936	-.2668	05.20	13.73	004.6	A			C5A
	.1956	-.2656	05.11	13.66	003.2	B			C5A
	.1958	-.2620	05.12	13.48	006.0	A			C5A
	.1985	-.2670	04.96	13.72	003.5	A			C5A
	.2000	-.2605	04.92	13.38	001.1	C			C5A
	.2005	-.2688	04.85	13.80	002.5	B			C5A
ABULFEDA N	.2045	-.2611	04.70	13.39	013.3	A			C5A
	.2093	-.2676	04.43	13.70	002.5	A			C5A
	.0224	-.2759	13.52	15.04	001.1	B			C5A
PARROT F	.0247	-.2769	13.40	15.08	020.7	B	C		C5A
	.0312	-.2778	13.08	15.09	004.6	A			C5A
PARROT E	.0375	-.2747	12.79	14.90	021.4	B	B5		C5A
	.0432	-.2723	12.52	14.75	003.2	A			C5A
	.0492	-.2796	12.19	15.09	003.2	A			C5A

CRATER	XSI	ETA	XINS	YINS	DIAM	Q	P	RMKS	REG
PARROT T	.0699	-.2736	11.21	14.68	008.1	B			C5A
	.0818	-.2752	10.62	14.70	007.0	B			C5A
	.0961	-.2796	09.90	14.85	003.9	A			C5A
	.0962	-.2748	09.92	14.61	002.8	B			C5A
	.0979	-.2799	09.81	14.86	003.5	A			C5A
	.1135	-.2793	09.05	14.75	003.2	A			C5A
	.1161	-.2703	08.97	14.28	002.5	B			C5A
	.1216	-.2708	08.70	14.28	003.2	A			C5A
	.1217	-.2770	08.66	14.59	003.2	A			C5A
	.1227	-.2790	08.60	14.69	009.8	C			C5A
AIRY P	.1399	-.2734	07.79	14.32	007.4	A			C5A
	.1418	-.2765	07.68	14.47	003.9	A			C5A
	.1491	-.2733	07.34	14.27	003.5	A			C5A
	.1503	-.2702	07.30	14.11	004.2	B			C5A
	.1508	-.2746	07.25	14.33	002.1	C			C5A
	.1688	-.2730	06.38	14.16	004.6	B			C5A
	.1718	-.2701	06.25	14.00	003.5	A			C5A
	.1942	-.2706	05.15	13.92	001.1	B			C5A
	.1944	-.2781	05.10	14.30	003.2	A			C5A
	.1950	-.2746	05.09	14.12	002.8	A			C5A
	.2002	-.2721	04.85	13.97	001.8	B			C5A
	.2007	-.2708	04.83	13.90	002.1	B			C5A
ABULFEDA M	.2014	-.2793	04.75	14.33	009.5	A			C5A
	.2084	-.2715	04.45	13.90	002.8	B			C5A
	.2155	-.2798	04.06	14.29	011.9	A			C5A
ABULFEDA F	.2190	-.2778	03.90	14.17	014.0	A			C5A
	.0346	-.2858	12.87	15.48	003.9	A			C5A
	.0377	-.2800	12.75	15.17	003.5	A			C5A
	.0396	-.2828	12.64	15.30	003.5	A			C5A
	.0413	-.2845	12.55	15.38	003.2	C			C5A
	.0455	-.2818	12.36	15.22	003.2	A			C5A
	.0706	-.2881	11.10	15.41	016.9	B	A4		C5A
ARGELANDER	.0976	-.2843	09.80	15.08	034.4	A	B4	*6	C5A
	.1081	-.2878	09.27	15.21	003.9	A			C5A
ARGELANDER A	.1132	-.2840	09.04	14.99	010.2	A			C5A
	.1181	-.2839	08.80	14.96	001.4	C			C5A
	.1218	-.2837	08.62	14.93	004.2	B			C5A
	.1357	-.2844	07.94	14.90	002.5	A			C5A
AIRY O	.1396	-.2875	07.73	15.04	004.9	A			C5A
	.1513	-.2837	07.18	14.79	001.4	B			C5A
	.1526	-.2846	07.11	14.83	001.1	B			C5A
ABULFEDA E	.1688	-.2880	06.30	14.92	006.3	A			C5A
ABULFEDA A	.1794	-.2826	05.81	14.60	014.4	A			C5A
	.1885	-.2872	05.34	14.79	002.8	A			C5A
	.2034	-.2835	04.63	14.53	002.8	A			C5A
	.2037	-.2865	04.60	14.68	003.5	A			C5A
PARROT O	.0429	-.2910	12.44	15.70	010.5	A			C5A
	.0573	-.2936	11.72	15.76	004.2	A			C5A
AIRY A	.1278	-.2923	08.28	15.34	013.7	A			C5A
	.1360	-.2967	07.86	15.52	003.2	B			C5A

CRATER	XSI	ETA	XINS	YINS	DIAM	Q	P	RMKS	REG
AIRY S	.1427	-.2947	07.54	15.39	003.5	B			C5A
	.1561	-.2962	06.88	15.40	006.3	A			C5A
	.1748	-.3025	05.93	15.63	006.0	A			C5A
	.1788	-.3029	05.73	15.63	003.9	A			C5A
	.1880	-.3018	05.29	15.53	002.8	A			C5A
	.1943	-.2909	05.04	14.95	004.6	B			C5A
	.1945	-.2941	05.01	15.11	003.5	A			C5A

Special Remarks marked thus * in Main Catalog

- *1. Elliptical
- *2. Boundary uncertain
- *3. Axial ridge; small central peak
- *4. Shallow; low walls
- *5. 1/4 of wall missing
- *6. Central peak
- *7. 40% of wall missing
- *8. Minor axis diameter given; major axis is 22.3 km.
- *9. Shallow sinkhole, no walls
- *10. Approximately rectangular; walls damaged